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<223> i
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<213> Penicillium citrinum
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<213> Penicillium citrinum
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cgacgagttt	cggaaaatca	aagatatgtg	catgtacaag	tttttggcgg	atgactttca		540
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caaagtgtgt	ttgaaccagt	tacaaaccca	agcccccaag	tacacaaagc	cattggctac		660
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 cgttgataaa gcagaatggg gctctttggg cgaaggaaat cgaagcttga tcaccggccc 480
 acagaatggc tggaagtggc agagcttcga cggggatgca gatgttc 527

<210> 21
 <211> 522
 <212> DNA
 <213> *Penicillium citrinum*

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 <211> 541
 <212> DNA
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 agtccgtgct cagtgtcaac gttgtcagca agccggatta aggtgtgtgt acagcgaag 240
 gctaccaag cgcaatttac ataaagaagc cgcagctgga actacaagag ccacagaaac 300
 ctcaaacgg atgaccgcga catctttctac ggtctttctc tcattggcag agactcctcc 360
 accttactgc tcaccaccta cgcattattg cacctcggca ctcaaggaaa cattatcaga 420

accatcagcg gcaaccctgc aattctatga tacatcaatc aactttgatg atcccagatc 480
 gtttcccggc ggctggcctc agccaaatac atttcgcgac gatgccaaaca gcaatgaatc 540
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<210> 23
 <211> 20
 <212> DNA
 <213> *Penicillium citrinum*

<400> 23
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<210> 24
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 <212> DNA
 <213> *Penicillium citrinum*

<400> 24
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<210> 25
 <211> 20
 <212> DNA
 <213> *Penicillium citrinum*

<400> 25
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<210> 26
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 <212> DNA
 <213> *Penicillium citrinum*

<400> 26
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<210> 27
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 <213> *Penicillium citrinum*

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<210> 28
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 <213> *Penicillium citrinum*

<400> 28
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<210> 29
 <211> 1524
 <212> DNA
 <213> *Penicillium citrinum*

<400> 29
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 <211> 784
 <212> DNA
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 cttcactgaa ccttcaact taactgcatt tcgccacaac taactcgacg aggcggcgga 300
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aaaacagcgc ttccgatgat gcgcgcaagt tgacgtgcat tctcaccggg agtggtcggg 540
 tgtgatccgc ggacaccaag catgtcaage attgcgccct ggggtccag aatcgtacca 600
 ccgccccaacg ttccaacctc aatagacggc atggagacag agatttgaag cgatccgcga 660
 agattgttca tgagagtgat gcagttagcg ctctccacaa cttgcgcggg atcctgacct 720
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<210> 33
 <211> 802
 <212> DNA
 <213> *Penicillium citrinum*

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 aacgcggtca agcatcagtc tcaggcacag cccgggtgtc gtttttggtt gcaatcttcc 180
 gccatcccat tccaaaggca aacacaaaacg tgcacgcgct agctcccact gctaagtaaa 240
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 ataccagacc tgcgccctatg gcgacgagaa cagcgctgcc tagggcccaa ggcaaatagt 660
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<210> 34
 <211> 562
 <212> DNA
 <213> *Penicillium citrinum*

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 cagaagataa ggcggtgatg aatgggtcga gatgtgaaat gagctcgcg atatgaagat 420
 tagagtgaag cgagggaagt gcttcggctc ttccattgtc atttctagtg gttgagccag 480
 accagtacca atccattcgt gtgctttgct tttgtccaca aggttgggct ttcacacct 540

145	150	155	160	
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tgg cga tgg tgc ttt tat atc aat ctc ccc atc ggc gct gtc gct gca Trp Arg Trp Cys Phe Tyr Ile Asn Leu Pro Ile Gly Ala Val Ala Ala 195 200 205				624
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cct ggc tca gtg gct ggt aaa cga caa gtg tgg tgc tct tgt tta ttt Pro Gly Ser Val Ala Gly Lys Arg Gln Val Trp Cys Ser Cys Leu Phe 305 310 315 320				960
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gga cag acg ttt gga gga tcg ctc ttc ctg gac ttt gct aac ctt gtc 1392
 Gly Gln Thr Phe Gly Gly Ser Leu Phe Leu Asp Phe Ala Asn Leu Val
 450 455 460

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 Phe Gly Ser Gly Leu Arg Thr Gly Leu Ser Lys Tyr Ala Pro Thr Val
 465 470 475 480

gac acg cag gcc gtg acg gca gca ggg gcg act ggc ttc aga gat gtg 1488
 Asp Thr Gln Ala Val Thr Ala Ala Gly Ala Thr Gly Phe Arg Asp Val
 485 490 495

gtc agc aag aat aac ctt cca ggg gtt gta aaa gct tac agt ctc gcc 1536
 Val Ser Lys Asn Asn Leu Pro Gly Val Val Lys Ala Tyr Ser Leu Ala
 500 505 510

gtt gat cat act ttt tac tta gca gtg gga gct acg gcg tgc acg ttt 1584
 Val Asp His Thr Phe Tyr Leu Ala Val Gly Ala Thr Ala Cys Thr Phe
 515 520 525

gtg ttt gcc ttt gga atg gga tgg cgg aag att gca acc aaa aac gac 1632
 Val Phe Ala Phe Gly Met Gly Trp Arg Lys Ile Ala Thr Lys Asn Asp
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<210> 38
 <211> 553
 <212> PRT
 <213> Penicillium citrinum
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His Ile Thr Gly Leu Lys Leu Gly Leu Val Val Ala Ser Val Thr Phe
 35 40 45

Val Ala Phe Leu Met Leu Leu Asp Met Ser Ile Ile Val Thr Ala Ile
 50 55 60

Pro His Ile Thr Ser Glu Phe His Ser Leu Asn Asp Val Gly Trp Tyr
 65 70 75 80

Gly Ser Ala Tyr Leu Leu Ala Asn Cys Ala Leu Gln Pro Leu Ala Gly
 85 90 95

Lys Leu Tyr Thr Leu Leu Gly Leu Lys Tyr Thr Phe Phe Ala Phe Leu
 100 105 110

Cys Ile Phe Glu Leu Gly Ser Val Leu Cys Gly Ala Ala Arg Ser Ser
 115 120 125

Thr Met Leu Ile Val Gly Arg Ala Val Ala Gly Met Gly Gly Ser Gly
 130 135 140
 Leu Val Asn Gly Ala Leu Thr Ile Leu Ser Thr Ala Ala Pro Lys His
 145 150 155 160
 Lys Gln Pro Val Leu Ile Gly Val Met Met Gly Leu Ser Gln Ile Ala
 165 170 175
 Ile Val Cys Gly Pro Leu Leu Gly Gly Ala Phe Thr Gln His Ala Thr
 180 185 190
 Trp Arg Trp Cys Phe Tyr Ile Asn Leu Pro Ile Gly Ala Val Ala Ala
 195 200 205
 Phe Leu Leu Leu Val Ile Thr Ile Pro Asp Arg Ile Ser Ser Thr Asp
 210 215 220
 Ser Glu Leu Ser Thr Asp Lys Pro Met Ala Asn Ile Lys Ser Thr Leu
 225 230 235 240
 Arg Lys Leu Asp Leu Val Gly Phe Val Val Phe Ala Ala Phe Ala Thr
 245 250 255
 Met Ile Ser Leu Ala Leu Glu Trp Gly Gly Ser Thr Tyr Thr Trp Arg
 260 265 270
 Ser Ser Val Ile Ile Gly Leu Phe Cys Gly Gly Gly Phe Ala Leu Ile
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 Ala Phe Val Leu Trp Glu Arg His Val Gly Asp Ala Val Ala Met Ile
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 Pro Gly Ser Val Ala Gly Lys Arg Gln Val Trp Cys Ser Cys Leu Phe
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 Ile Tyr Phe Gln Ala Val Lys Asp Val Ser Pro Thr Leu Ser Gly Val
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 Tyr Met Leu Pro Gly Ile Leu Gly Gln Val Ile Met Ala Met Val Ser
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cct gtc tcg cca tcg ctg ttt gac ctc gaa gta gag ggg aac tcg tca Pro Val Ser Pro Ser Leu Phe Asp Leu Glu Val Glu Gly Asn Ser Ser 180 185 190				576
tcc gga caa tcc aac aca agc aac acg caa cga gac ctt ttc gaa agt Ser Gly Gln Ser Asn Thr Ser Asn Thr Gln Arg Asp Leu Phe Glu Ser 195 200 205				624
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T44505-0474

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 Thr Arg Asn Asp Asn Gly Arg Ala Glu Ala Leu Pro Ser Phe His Ser
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 aat ctt cat atc ggc gag ctc att tca cat ctc gac cca ttc atg cac 1056
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 355 360 365
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 Ser Glu Ile Glu Thr Ala Leu Gly Ile Ala Gln Glu His Gly Ala Ala
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 Ala Ser Ile Arg Leu Val Leu Ser Asp Met Pro Ser Thr Ser Trp Gln
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 Ile Leu Gly Ala Glu Asn Lys Thr Ile Thr Pro Ala Ser Arg Leu Leu
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 Ser Val Leu Trp Ser Asp Glu Ala Gly Asp Glu Glu Pro Lys Ser Thr
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 Lys Ala Ser Gly Lys Thr Ile Asn Val Leu Arg Arg Cys Tyr Lys Glu
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<400> 42

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35 40 45

Ala Gly Leu Arg Cys Val Tyr Ser Glu Arg Leu Pro Lys Arg Asn Leu
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His Lys Glu Ala Ala Ala Gly Thr Thr Arg Ala Thr Glu Thr Ser Gln
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0936705-0430

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Pro Pro Pro Tyr Cys Ser Pro Pro Thr His Ile Gly Thr Ser Ala Leu
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Lys Glu Thr Leu Ser Glu Pro Ser Ala Ala Thr Leu Gln Phe Tyr Asp
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Thr Ser Ile Asn Phe Asp Asp Pro Glu Ser Phe Pro Gly Gly Trp Pro
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Gln Pro Asn Thr Phe Arg Asp Asp Ala Asn Ser Asn Glu Ser Ser Gly
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Ile Pro Asp Leu Gly Tyr Asp Phe Glu Gly Pro Leu Asp Ala Thr Ala
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Pro Val Ser Pro Ser Leu Phe Asp Leu Glu Val Glu Gly Asn Ser Ser
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Ser Gly Gln Ser Asn Thr Ser Asn Thr Gln Arg Asp Leu Phe Glu Ser
195 200 205

Leu Ser Asp Val Ser Gln Asp Leu Glu Val Ile Leu His Gly Val Thr
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Val Glu Trp Pro Lys Gln Lys Ile Leu Ser Tyr Pro Ile Gly Asp Phe
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Leu Asn Ala Phe Gly Arg Leu Leu Leu His Leu Gln Glu Arg Val Ile
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Thr Ser Ser Asn Ser Ser Met Leu Asp Gly Cys Leu Gln Thr Lys Asn
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Leu Phe Met Ala Val His Cys Tyr Met Leu Ser Val Lys Ile Met Thr
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Gly Gln Lys Gln Ser Thr Arg Met Asp Trp Tyr Trp Ser Gly Ser Thr
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Asn Leu His Ile Gly Glu Leu Ile Ser His Leu Asp Pro Phe Met His
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TC440-5963550

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Ser	Phe	Gly	Phe	Gly	Gly	Thr	Asn	Ala	His	Ala	Ile	Ile	Glu	Glu	Tyr					
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Met	Ala	Pro	Pro	His	Lys	Pro	Thr	Ala	Val	Val	Thr	Glu	Val	Thr	Ser					
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His	Asp	Asp	Val	Asp	Met	His	Asp	Ile	Ala	Tyr	Thr	Leu	Leu	Glu	Lys					
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Arg	Ser	Ile	Leu	Pro	Phe	Arg	Arg	Ala	Ile	Ala	Ala	His	Asn	Lys	Glu					
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Val	Ala	Arg	Ala	Ala	Leu	Glu	Ala	Ala	Ile	Ala	Asp	Gly	Glu	Val	Val					
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Thr	Asp	Phe	Arg	Thr	Asp	Ala	Asn	Asp	Asn	Pro	Arg	Val	Leu	Gly	Val					
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Leu	Gln	Thr	Leu	Pro	Glu	Lys	Tyr	Arg	Pro	Thr	Trp	Thr	Leu	Tyr	Asp					
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Gln	Leu	Met	Leu	Glu	Gly	Asp	Ala	Ser	Asn	Val	Arg	Le								

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gat Asp 705	gac Asp	gca Ala	aag Lys	gaa Glu 710	cta Leu	tgc Cys	gag Glu	ctc Leu	gaa Glu	gcc Ala 715	ttt Phe	gag Glu	ggt Gly	cgg Arg	gtc Val 720	2160
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cgt Arg	ttc Phe	gga Gly	gtt Val 900	cgg Arg	agt Ser	atc Ile	gac Asp	gcc Ala 905	gag Glu	ggc Gly	ttc Phe	gta Val 910	caa Gln	caa Gln	gtc Val	2736
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gcg agg Ala Arg 1835	gga gca tcc tca tcg Gly Ala Ser Ser Ser 1840	atg tac tat ctt gag Met Tyr Tyr Leu Glu 1845	tca acc gag Ser Thr Glu 1845	5544	
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gtt cgt Val Arg 1865	gtt cgc tac gct ctt Val Arg Tyr Ala Leu 1870	ccc cag gca att cgc Pro Gln Ala Ile Arg 1875	gtg ggc cat Val Gly His 1875	5634	
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Val Thr Arg Ala Glu Met Glu Glu Asp Phe Asp Ala Ile Arg Phe	
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Lys Thr Val Ile Asp Met Ala Asp Leu Glu Leu Thr Thr Gly Ile	
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Pro Asp Leu Asp Pro Ala Leu Gln Asp Arg Ile Ile Tyr Phe Asn	
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Gly Glu Ser Val Asp Pro Thr Ile Pro Leu Ile Asp Gln Gly Val	
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cgc gag agg ttg tcc ctt ggc cag gag tat tcc tgg agg cag caa Arg Glu Arg Leu Ser Leu Gly Gln Glu Tyr Ser Trp Arg Gln Gln 2585 2590 2595			7794
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Val Gly Met Pro Phe Val Arg Gly Ile Leu Glu Glu Leu Asp Asn Ser
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595 600 605

Gln Leu Met Leu Glu Gly Asp Ala Ser Asn Val Arg Leu Ala Ser Phe
610 615 620

Ser Gln Pro Leu Cys Cys Ala Val Gln Ile Val Leu Val Arg Leu Leu
625 630 635 640

Ala Ala Ala Gly Ile Glu Phe Ser Ala Ile Val Gly His Ser Ser Gly
645 650 655

Glu Ile Ala Cys Ala Phe Ala Ala Gly Phe Ile Ser Ala Thr Gln Ala
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Ile Arg Ile Ala His Leu Arg Gly Val Val Ser Ala Glu His Ala Ser
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Ser Pro Ser Gly Gln Thr Gly Ala Met Leu Ala Ala Gly Met Ser Tyr
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Cys Val Ala Ala Ser Asn Ser Pro Asp Ser Val Thr Phe Ser Gly Asp
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Met Asp Ala Ile Gln His Val Glu Gly Val Leu Glu Asp Glu Ser Thr
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Phe Ala Arg Ile Leu Arg Val Asp Lys Ala Tyr His Ser His His Met
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His Pro Cys Ala Ala Pro Tyr Val Lys Ala Leu Leu Glu Cys Asp Cys
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Ala Val Ala Asp Gly Gln Gly Asn Asp Ser Val Ala Trp Phe Ser Ala
785 790 795 800

Val His Glu Thr Ser Lys Gln Met Thr Val Gln Asp Val Met Pro Ala
805 810 815

Tyr Trp Lys Asp Asn Leu Val Ser Pro Val Leu Phe Ser Gln Ala Val
820 825 830

Gln Lys Ala Val Ile Thr His Arg Leu Ile Asp Val Ala Ile Glu Ile
835 840 845

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Gly	Ser	Ala	Ile	His	Val	Val	Gln	Asp	Leu	Val	Ser	Gln	Ile	Ala
1415						1420					1425			
His	Arg	Tyr	Gln	Ser	Ile	Asp	Ile	Leu	Glu	Ile	Gly	Leu	Gly	Thr
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Gly	Ile	Ala	Thr	Lys	Arg	Val	Leu	Ala	Ser	Pro	Gln	Leu	Gly	Phe
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Asn	Ser	Tyr	Thr	Cys	Thr	Asp	Ile	Ser	Ala	Asp	Val	Ile	Gly	Lys
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Ala	Arg	Glu	Gln	Leu	Ser	Glu	Phe	Asp	Gly	Leu	Met	Gln	Phe	Glu
1475						1480					1485			
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1490						1495					1500			
His	Ser	Tyr	Asp	Leu	Ile	Ile	Ala	Ser	Asp	Val	Leu	His	Ala	Ser
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Pro	Gly	Gly	His	Leu	Val	Thr	Phe	Gly	Val	Thr	His	Arg	Glu	Pro
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 Val Gln Gly Ala Arg Ile Leu His Glu Arg Phe Ser Glu Gln Thr
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 Gly Gly Asp Asn Gly Ser Gly Ser Lys Gly Ser Ile Ala Asp Gln
 2420 2425 2430

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Phe	Ser	Asp	Leu	Ala	Val	Gln	Gln	Arg	Glu	Asn	Leu	Glu	Asn	Gly
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Arg	Met	Gly	Asp	Asp	Ile	Ala	Phe	Trp	Lys	Ser	Met	His	Ser	Lys
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Val	Ser	Ser	Ser	Ala	Pro	Thr	Val	Leu	Pro	Ile	Met	Asn	Leu	Ile
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2795						2800					2805			
Thr	Trp	Gln	Gln	Tyr	Glu	Ala	Ile	Ala	Arg	Leu	Asp	Pro	Met	Val
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Ala	Phe	Arg	Ile	Lys	Glu	Arg	Ser	Arg	Lys	His	Lys	Ala	Thr	Pro
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Met	Gln	Phe	Tyr	Leu	Ala	Ala	Tyr	His	Val	Leu	Leu	Ala	Arg	Leu
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2870						2875					2880			
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His	Ala	Arg	Val	Pro	Tyr	Gly	Val	Ile	Leu	Asp	Cys	Leu	Gly	Leu
2915						2920					2925			
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Ala Thr Ala Met Ala Gly Ser Ala Cys Ser Asn Thr Ser Thr Pro Ile
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gcc ata gtt gga atg gga tgt cga ttt gct gga gat gca acg agt cca 144
Ala Ile Val Gly Met Gly Cys Arg Phe Ala Gly Asp Ala Thr Ser Pro
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Gln Lys Leu Trp Glu Met Val Glu Arg Gly Gly Ser Ala Trp Ser Lys
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Val Pro Ser Ser Arg Phe Asn Val Arg Gly Val Tyr His Pro Asn Gly
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gaa agg gtc ggg tcc acc cac gta aag ggt gga cac ttc atc gac gag 288
Glu Arg Val Gly Ser Thr His Val Lys Gly Gly His Phe Ile Asp Glu
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Asp Pro Ala Leu Phe Asp Ala Ala Phe Phe Asn Met Thr Thr Glu Val
100 105 110
gcc agc tgc atg gat ccg cag tat cgg ctt atg ctt gag gtg gtc tac 384
Ala Ser Cys Met Asp Pro Gln Tyr Arg Leu Met Leu Glu Val Val Tyr
115 120 125
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Glu Ser Leu Glu Ser Ala Gly Ile Thr Ile Asp Gly Met Ala Gly Ser
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Asn Thr Ser Val Phe Gly Gly Val Met Tyr His Asp Tyr Gln Asp Ser
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Ile Val Ile Gly Ala Asn Leu Leu Leu Asn Pro Asp Val Phe Val Thr	
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Tyr Asp Lys Ala Gly Leu Asp Met Ser Leu Thr Ser Tyr Val Glu Ala	
325 330 335	
cac gga act gga aca cca act ggt gac ccc ctt gaa atc tca gca att	1056
His Gly Thr Gly Thr Pro Thr Gly Asp Pro Leu Glu Ile Ser Ala Ile	
340 345 350	
tca gca gct ttt aaa gga cat cct ctg cac ctt ggc tct gtg aaa gca	1104
Ser Ala Ala Phe Lys Gly His Pro Leu His Leu Gly Ser Val Lys Ala	
355 360 365	
aat att ggc cat aca gaa gcc gcc agt ggc ctg gcc agt ata atc aag	1152
Asn Ile Gly His Thr Glu Ala Ala Ser Gly Leu Ala Ser Ile Ile Lys	
370 375 380	
gtg gcc ttg gcc ttg gag aag ggc ttg att ccc cct aat gcg cgg ttc	1200
Val Ala Leu Ala Leu Glu Lys Gly Leu Ile Pro Pro Asn Ala Arg Phe	
385 390 395 400	
ctg caa aag aac agc aag ctg atg ctt gac caa aag aac atc aag atc	1248
Leu Gln Lys Asn Ser Lys Leu Met Leu Asp Gln Lys Asn Ile Lys Ile	
405 410 415	
ccc atg tct gct caa gac tgg cct gtg aaa gat ggg act cgt cgc gca	1296
Pro Met Ser Ala Gln Asp Trp Pro Val Lys Asp Gly Thr Arg Arg Ala	
420 425 430	
tct gtc aat aac ttc ggc ttt ggt ggt tcg aat gct cac gtc att ttg	1344
Ser Val Asn Asn Phe Gly Phe Gly Gly Ser Asn Ala His Val Ile Leu	

435	440	445	
gaa tca tat gat cgc gca tca ttg gcc ctg cca gag gat caa gtg cat Glu Ser Tyr Asp Arg Ala Ser Leu Ala Leu Pro Glu Asp Gln Val His 450 455 460			1392
gtc aat ggt aac tct gag cat ggt agg gtt gag gat ggt tcc aaa cag Val Asn Gly Asn Ser Glu His Gly Arg Val Glu Asp Gly Ser Lys Gln 465 470 475 480			1440
agc cgc ata tac gtt gtg cgt gcc aag gac gag caa gct tgt cgg cga Ser Arg Ile Tyr Val Val Arg Ala Lys Asp Glu Gln Ala Cys Arg Arg 485 490 495			1488
acg ata gca agc ctg cga gac tac att aaa tcc gtc gct gac att gac Thr Ile Ala Ser Leu Arg Asp Tyr Ile Lys Ser Val Ala Asp Ile Asp 500 505 510			1536
ggg gaa ccc ttc ctc gcc agc ctc gcc tat aca cta ggc tct cgc cgt Gly Glu Pro Phe Leu Ala Ser Leu Ala Tyr Thr Leu Gly Ser Arg Arg 515 520 525			1584
tcc att ctg cca tgg acg tca gtg tat gta gca gac agc ctt ggc ggc Ser Ile Leu Pro Trp Thr Ser Val Tyr Val Ala Asp Ser Leu Gly Gly 530 535 540			1632
ctt gtt tct gcc ctc agc gat gag tcc aat caa cca aaa cga gcg aat Leu Val Ser Ala Leu Ser Asp Glu Ser Asn Gln Pro Lys Arg Ala Asn 545 550 555 560			1680
gag aaa gta cgg ctc gga ttt gta ttc acc ggt cag ggg gcg cag tgg Glu Lys Val Arg Leu Gly Phe Val Phe Thr Gly Gln Gly Ala Gln Trp 565 570 575			1728
cat gca atg ggc aga gag ctg gtc aat aca ttc cca gta ttc aaa cag His Ala Met Gly Arg Glu Leu Val Asn Thr Phe Pro Val Phe Lys Gln 580 585 590			1776
gcg att ctt gaa tgt gat ggc tac atc aag caa ctg ggc gcg agt tgg Ala Ile Leu Glu Cys Asp Gly Tyr Ile Lys Gln Leu Gly Ala Ser Trp 595 600 605			1824
aat ttt atg gag gag ctc cac cgt gat gag ctg acg act cgg gta aat Asn Phe Met Glu Glu Leu His Arg Asp Glu Leu Thr Thr Arg Val Asn 610 615 620			1872
gat gcc gaa tac agt cta cca ctg tca acc gct atc caa att gca ctt Asp Ala Glu Tyr Ser Leu Pro Leu Ser Thr Ala Ile Gln Ile Ala Leu 625 630 635 640			1920
gtg cgt ctc ctt tgg tca tgg gga att cgg cca acg ggg ata acc agt Val Arg Leu Leu Trp Ser Trp Gly Ile Arg Pro Thr Gly Ile Thr Ser 645 650 655			1968
cac tca agt gga gag gct gct gct gcc tac gca gct ggg gct tta tcc His Ser Ser Gly Glu Ala Ala Ala Tyr Ala Ala Gly Ala Leu Ser 660 665 670			2016
gcg cgg tcg gcc att ggg atc act tat ata cgc ggt gta ttg acc act Ala Arg Ser Ala Ile Gly Ile Thr Tyr Ile Arg Gly Val Leu Thr Thr 675 680 685			2064
aag ccc aag ccc gca ttg gca gcc aaa gga gga atg atg gcg gtg ggt Lys Pro Lys Pro Ala Leu Ala Ala Lys Gly Gly Met Met Ala Val Gly 690 695 700			2112
ctt ggt cgc agt gag acc aat gtt tac att tcg cgt ctc aac cag gag Leu Gly Arg Ser Glu Thr Asn Val Tyr Ile Ser Arg Leu Asn Gln Glu 705 710 715 720			2160

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Asp Gly Cys Val Val Gly Cys Ile Asn Ser Gln Cys Ser Val Thr	
725 730 735	
gtg tgc gga gat ttg ggt gca atc gag aaa ctt gaa aag ttg tta cac	2256
Val Ser Gly Asp Leu Gly Ala Ile Glu Lys Leu Glu Lys Leu Leu His	
740 745 750	
gcc gat ggc atc ttt acc agg aaa ctg aaa gtc act gaa gcc ttc cat	2304
Ala Asp Gly Ile Phe Thr Arg Lys Leu Lys Val Thr Glu Ala Phe His	
755 760 765	
tca agc cac atg cga cca atg gca gat gcc ttt ggg gcg tca ctg aga	2352
Ser Ser His Met Arg Pro Met Ala Asp Ala Phe Gly Ala Ser Leu Arg	
770 775 780	
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Asp Leu Phe Asn Ser Asp Asn Asn Asn Asp Asn Pro Asn Ala Asp Thr	
785 790 795 800	
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Ser Lys Gly Val Leu Tyr Ser Ser Pro Lys Thr Gly Ser Arg Met Thr	
805 810 815	
gat ctt aaa ttg cta ttg gat ccc aca cac tgg atg gat agt atg cta	2496
Asp Leu Lys Leu Leu Asp Pro Thr His Trp Met Asp Ser Met Leu	
820 825 830	
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Gln Pro Val Glu Phe Glu Ser Ser Leu Arg Glu Met Cys Phe Asp Pro	
835 840 845	
aac acc aaa gag aaa gcc gtc gat gtg att att gaa ata ggg cct cac	2592
Asn Thr Lys Glu Lys Ala Val Asp Val Ile Ile Glu Ile Gly Pro His	
850 855 860	
gga gcg ctt ggt ggt cca atc aac caa gtc atg cag gat ctg ggt ctg	2640
Gly Ala Leu Gly Gly Pro Ile Asn Gln Val Met Gln Asp Leu Gly Leu	
865 870 875 880	
aaa gga aca gat ata aac tat ctc agt tgc ctt tct cgc ggc aga agc	2688
Lys Gly Thr Asp Ile Asn Tyr Leu Ser Cys Leu Ser Arg Gly Arg Ser	
885 890 895	
tgc ttg gag aca atg tat cgt gct gct acg gag ttg ata agc aag ggt	2736
Ser Leu Glu Thr Met Tyr Arg Ala Ala Thr Glu Leu Ile Ser Lys Gly	
900 905 910	
tat ggg ctc aaa atg gac gct ata aac ttt cct cat gga aga aaa gag	2784
Tyr Gly Leu Lys Met Asp Ala Ile Asn Phe Pro His Gly Arg Lys Glu	
915 920 925	
ccc aga gtg aag gta ctg agc gat ttg ccg gcg tac ccg tgg aat cac	2832
Pro Arg Val Lys Val Leu Ser Asp Leu Pro Ala Tyr Pro Trp Asn His	
930 935 940	
caa acc cgt tat tgg aga gag cct cgc ggc agt cgt gag tcc aaa cag	2880
Gln Thr Arg Tyr Trp Arg Glu Pro Arg Gly Ser Arg Glu Ser Lys Gln	
945 950 955 960	
aga acc cat ccg cct cac act ttg ata ggc tca cgg gaa tct ctc tct	2928
Arg Thr His Pro Pro His Thr Leu Ile Gly Ser Arg Glu Ser Leu Ser	
965 970 975	
cct cat ttc gcg cct aaa tgg aaa cat gtt ctc cgt ctg tca gat att	2976
Pro His Phe Ala Pro Lys Trp Lys His Val Leu Arg Leu Ser Asp Ile	
980 985 990	
cca tgg ata cga gat cac gtc gtt ggt tgc agc atc atc ttt ccg gga	3024
Pro Trp Ile Arg Asp His Val Val Gly Ser Ser Ile Ile Phe Pro Gly	

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995					1000					1005					
gct	ggc	ttc	atc	agc	atg	gcc	atc	gag	ggg	ttt	tca	caa	gtc	tgc	3069
Ala	Gly	Phe	Ile	Ser	Met	Ala	Ile	Glu	Gly	Phe	Ser	Gln	Val	Cys	
	1010						1015				1020				
cca	cca	gtt	gcg	ggg	gct	agc	atc	aac	tac	aac	ttg	cgt	gac	gtt	3114
Pro	Pro	Val	Ala	Gly	Ala	Ser	Ile	Asn	Tyr	Asn	Leu	Arg	Asp	Val	
	1025						1030				1035				
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Glu	Leu	Ala	Gln	Ala	Leu	Ile	Ile	Pro	Ala	Asp	Ala	Glu	Ala	Glu	
	1040						1045				1050				
gtt	gac	ctg	cgc	cta	acg	atc	cgt	tca	tgt	gag	gaa	agg	tcc	ctc	3204
Val	Asp	Leu	Arg	Leu	Thr	Ile	Arg	Ser	Cys	Glu	Glu	Arg	Ser	Leu	
	1055						1060				1065				
ggc	aca	aag	aac	tgg	cat	caa	ttt	tct	gtg	cac	tca	att	tcg	ggc	3249
Gly	Thr	Lys	Asn	Trp	His	Gln	Phe	Ser	Val	His	Ser	Ile	Ser	Gly	
	1070						1075				1080				
gaa	aat	aat	acc	tgg	aca	gaa	cac	tgc	acc	gga	tta	ata	cgt	tcg	3294
Glu	Asn	Asn	Thr	Trp	Thr	Glu	His	Cys	Thr	Gly	Leu	Ile	Arg	Ser	
	1085						1090				1095				
gag	agc	gaa	aga	agc	cac	ctt	gac	tgt	tca	act	gtg	gaa	gcc	tca	3339
Glu	Ser	Glu	Arg	Ser	His	Leu	Asp	Cys	Ser	Thr	Val	Glu	Ala	Ser	
	1100						1105				1110				
cgc	agg	ttg	aat	cta	ggc	tca	gat	aac	cgg	agc	att	gat	ccc	aac	3384
Arg	Arg	Leu	Asn	Leu	Gly	Ser	Asp	Asn	Arg	Ser	Ile	Asp	Pro	Asn	
	1115						1120				1125				
gat	ctc	tgg	gag	tcc	tta	cac	gcg	aat	ggg	ata	tgc	cac	gga	ccc	3429
Asp	Leu	Trp	Glu	Ser	Leu	His	Ala	Asn	Gly	Ile	Cys	His	Gly	Pro	
	1130						1135				1140				
att	ttt	cag	aac	att	cag	cga	att	caa	aac	aat	gga	cag	ggc	tcg	3474
Ile	Phe	Gln	Asn	Ile	Gln	Arg	Ile	Gln	Asn	Asn	Gly	Gln	Gly	Ser	
	1145						1150				1155				
ttt	tgc	aga	ttt	tcc	att	gct	gac	act	gcc	tcg	gct	atg	cct	cac	3519
Phe	Cys	Arg	Phe	Ser	Ile	Ala	Asp	Thr	Ala	Ser	Ala	Met	Pro	His	
	1160						1165				1170				
tcg	tac	gag	aat	cga	cac	atc	gtc	cat	cct	act	act	ctg	gac	tcg	3564
Ser	Tyr	Glu	Asn	Arg	His	Ile	Val	His	Pro	Thr	Thr	Leu	Asp	Ser	
	1175						1180				1185				
gtg	atc	cag	gcg	gca	tac	acg	gtg	tta	ccc	tac	gcg	gga	aca	cgt	3609
Val	Ile	Gln	Ala	Ala	Tyr	Thr	Val	Leu	Pro	Tyr	Ala	Gly	Thr	Arg	
	1190						1195				1200				
atg	aaa	acg	gcc	atg	gta	cca	agg	agg	cta	aga	aat	gtc	aaa	ata	3654
Met	Lys	Thr	Ala	Met	Val	Pro	Arg	Arg	Leu	Arg	Asn	Val	Lys	Ile	
	1205						1210				1215				
tcc	tct	agc	ctg	gct	gac	ttg	gag	gct	ggg	gat	gct	ctg	gac	gca	3699
Ser	Ser	Ser	Leu	Ala	Asp	Leu	Glu	Ala	Gly	Asp	Ala	Leu	Asp	Ala	
	1220						1225				1230				
cag	gcc	agc	atc	aag	gat	cgc	aac	tct	caa	tcc	ttc	tct	acc	gac	3744
Gln	Ala	Ser	Ile	Lys	Asp	Arg	Asn	Ser	Gln	Ser	Phe	Ser	Thr	Asp	
	1235						1240				1245				
ttg	gca	gtg	ttt	gat	gac	tat	gat	agc	ggg	tct	tct	ccc	tcg	gac	3789
Leu	Ala	Val	Phe	Asp	Asp	Tyr	Asp	Ser	Gly	Ser	Ser	Pro	Ser	Asp	
	1250						1255				1260				

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Gly Ile Pro Val Ile Glu Ile Glu Gly Leu Val Phe Gln Ser Val	
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Gly Ser Ser Phe Ser Asp Gln Lys Ser Asp Ser Asn Asp Thr Glu	
1280 1285 1290	
aat gcc tgc agc tcc tgg gtt tgg gcc cct gac atc agc ttg ggt	3924
Asn Ala Cys Ser Ser Trp Val Trp Ala Pro Asp Ile Ser Leu Gly	
1295 1300 1305	
gac tcc act tgg ctc aaa gaa aag ttg agc act gag gct gag acg	3969
Asp Ser Thr Trp Leu Lys Glu Lys Leu Ser Thr Glu Ala Glu Thr	
1310 1315 1320	
aaa gaa acg gaa ctc atg atg gac ctc cga aga tgc acg atc aac	4014
Lys Glu Thr Glu Leu Met Met Asp Leu Arg Arg Cys Thr Ile Asn	
1325 1330 1335	
ttt ata cag gag gct gtc act gat ttg aca aat tct gat atc caa	4059
Phe Ile Gln Glu Ala Val Thr Asp Leu Thr Asn Ser Asp Ile Gln	
1340 1345 1350	
cat ctg gat ggc cac ctt cag aag tat ttc gat tgg atg aat gtc	4104
His Leu Asp Gly His Leu Gln Lys Tyr Phe Asp Trp Met Asn Val	
1355 1360 1365	
caa ttg gac ctt gcg aga caa aac aag ctc agc cca gcc agt tgc	4149
Gln Leu Asp Leu Ala Arg Gln Asn Lys Leu Ser Pro Ala Ser Cys	
1370 1375 1380	
gac tgg cta agt gac gat gct gag cag aag aaa tgc cta cag gcc	4194
Asp Trp Leu Ser Asp Asp Ala Glu Gln Lys Lys Cys Leu Gln Ala	
1385 1390 1395	
aga gtc gct gga gaa agc gtc aat ggc gag atg att tct cgt cta	4239
Arg Val Ala Gly Glu Ser Val Asn Gly Glu Met Ile Ser Arg Leu	
1400 1405 1410	
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Gly Pro Gln Leu Ile Ala Met Leu Arg Arg Glu Thr Glu Pro Leu	
1415 1420 1425	
gag ttg atg atg caa gat cag ctg cta agc aga tac tac gtc aac	4329
Glu Leu Met Met Gln Asp Gln Leu Leu Ser Arg Tyr Tyr Val Asn	
1430 1435 1440	
gca atc aaa tgg agc cga tca aac gca caa gcc agc gag ctg atc	4374
Ala Ile Lys Trp Ser Arg Ser Asn Ala Gln Ala Ser Glu Leu Ile	
1445 1450 1455	
cga ctt tgc gcc cac aag aac ccg cgt tct cgc att ttg gag att	4419
Arg Leu Cys Ala His Lys Asn Pro Arg Ser Arg Ile Leu Glu Ile	
1460 1465 1470	
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Gly Gly Gly Thr Gly Gly Cys Thr Lys Leu Ile Val Asn Ala Leu	
1475 1480 1485	
gga aac acc aag ccg atc gat cgt tat gac ttc acc gat gtg tct	4509
Gly Asn Thr Lys Pro Ile Asp Arg Tyr Asp Phe Thr Asp Val Ser	
1490 1495 1500	
gcc ggg ttt ttc gag tcg gcg cgt gag caa ttt gcg gat tgg caa	4554
Ala Gly Phe Phe Glu Ser Ala Arg Glu Gln Phe Ala Asp Trp Gln	
1505 1510 1515	
gac gtg atg act ttc aaa aaa ttg gat att gaa agc gat ccc gag	4599
Asp Val Met Thr Phe Lys Lys Leu Asp Ile Glu Ser Asp Pro Glu	

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cag gtc ctg cat gca act cga tgc atg aaa cga aca ctg agt aac Gln Val Leu His Ala Thr Arg Cys Met Lys Arg Thr Leu Ser Asn 1550 1555 1560			4689
gtt cga aaa ttg ctc aag cct ggg ggc aac ttg att ttg gtt gag Val Arg Lys Leu Leu Lys Pro Gly Gly Asn Leu Ile Leu Val Glu 1565 1570 1575			4734
act acc agg gat cag ctc gat ttg ttc ttt acc ttc gga ctg ttg Thr Thr Arg Asp Gln Leu Asp Leu Phe Phe Thr Phe Gly Leu Leu 1580 1585 1590			4779
cca ggt tgg tgg ctc agt gag gag cct gag cgg aag tcg acg cca Pro Gly Trp Trp Leu Ser Glu Glu Pro Glu Arg Lys Ser Thr Pro 1595 1600 1605			4824
tcg ctc act acc gat ctt tgg aac acc atg ttg gac acg agc ggt Ser Leu Thr Thr Asp Leu Trp Asn Thr Met Leu Asp Thr Ser Gly 1610 1615 1620			4869
ttc aac ggt gtg gaa ttg gag gtt cgt gat tgt gaa gac gat gag Phe Asn Gly Val Glu Leu Glu Val Arg Asp Cys Glu Asp Asp Glu 1625 1630 1635			4914
ttt tac atg atc agc aca atg cta tcg acg gct aga aaa gag aat Phe Tyr Met Ile Ser Thr Met Leu Ser Thr Ala Arg Lys Glu Asn 1640 1645 1650			4959
aca acc ccg gat aca gtg gca gaa tcg gag gtg ctt ttg ctg cac Thr Thr Pro Asp Thr Val Ala Glu Ser Glu Val Leu Leu Leu His 1655 1660 1665			5004
gga gcg ctc cga cct cct tca tct tgg ctg gaa agt ctc cag gca Gly Ala Leu Arg Pro Pro Ser Ser Trp Leu Glu Ser Leu Gln Ala 1670 1675 1680			5049
gca att tgt gaa aag acc agt tct agc cca tcg atc aac gct ctg Ala Ile Cys Glu Lys Thr Ser Ser Ser Pro Ser Ile Asn Ala Leu 1685 1690 1695			5094
ggc gag gta gat acc act gga agg aca tgc att ttt ctt ggg gaa Gly Glu Val Asp Thr Thr Gly Arg Thr Cys Ile Phe Leu Gly Glu 1700 1705 1710			5139
atg gag tcc tcg ctc ctt gga gag gtg gga agc gag acc ttc aaa Met Glu Ser Ser Leu Leu Gly Glu Val Gly Ser Glu Thr Phe Lys 1715 1720 1725			5184
tcc atc acc gcg atg ctg aat aac tgc aac gca ctt ctc tgg gtg Ser Ile Thr Ala Met Leu Asn Asn Cys Asn Ala Leu Leu Trp Val 1730 1735 1740			5229
tct aga gga gca gcc atg agc tcc gag gat cca tgg aaa gct cta Ser Arg Gly Ala Ala Met Ser Ser Glu Asp Pro Trp Lys Ala Leu 1745 1750 1755			5274
cat att ggt ctg ctg cgt acc atc cgc aac gaa aat aac ggg aag His Ile Gly Leu Leu Arg Thr Ile Arg Asn Glu Asn Asn Gly Lys 1760 1765 1770			5319
gaa tat gta tcg ttg gat ctc gat cct tct cga aac gca tac acc Glu Tyr Val Ser Leu Asp Leu Asp Pro Ser Arg Asn Ala Tyr Thr 1775 1780 1785			5364

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cac His	gag Glu 1790	tcc Ser	ctg Leu	tat Tyr	gct Ala	atc Ile 1795	tgc Cys	aat Asn	atc Ile	ttc Phe	aat Asn 1800	ggc Gly	cgc Arg	ctc Leu	5409
ggc Gly	gac Asp 1805	ctt Leu	tcc Ser	gaa Glu	gac Asp	aag Lys 1810	gag Glu	ttt Phe	gaa Glu	ttt Phe	gca Ala 1815	gag Glu	aga Arg	aac Asn	5454
ggc Gly	gtc Val 1820	atc Ile	cac His	gta Val	ccg Pro	cga Arg 1825	ctt Leu	ttc Phe	aat Asn	gac Asp	ccg Pro 1830	cac His	tgg Trp	aag Lys	5499
gac Asp	caa Gln 1835	gaa Glu	gcg Ala	gtt Val	gag Glu	gtc Val 1840	aca Thr	ctg Leu	cag Gln	ccg Pro	ttc Phe 1845	gag Glu	caa Gln	ccc Pro	5544
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tcc Ser	ctg Leu 1865	caa Gln	ttt Phe	cga Arg	gac Asp	gac Asp 1870	gaa Glu	gga Gly	cgt Arg	gaa Glu	ggc Gly 1875	aag Lys	gat Asp	ctt Leu	5634
ccg Pro	gat Asp 1880	gat Asp	tgg Trp	gta Val	gaa Glu	atc Ile 1885	gaa Glu	ccc Pro	aaa Lys	gct Ala	ttc Phe 1890	ggg Gly	ctc Leu	aat Asn	5679
ttt Phe	cgg Arg 1895	gat Asp	gtc Val	atg Met	gtt Val	gcc Ala 1900	atg Met	ggg Gly	caa Gln	ttg Leu	gag Glu 1905	gcc Ala	aac Asn	cgt Arg	5724
gtg Val	atg Met 1910	ggc Gly	ttc Phe	gaa Glu	tgc Cys	gcc Ala 1915	gga Gly	gtg Val	atc Ile	aca Thr	aag Lys 1920	ctc Leu	ggg Gly	gga Gly	5769
gct Ala	gct Ala 1925	gcc Ala	gct Ala	agc Ser	caa Gln	ggc Gly 1930	ctc Leu	aga Arg	tta Leu	ggg Gly	gac Asp 1935	cgc Arg	gta Val	tgt Cys	5814
gca Ala	cta Leu 1940	ctg Leu	aaa Lys	ggc Gly	cat His	tgg Trp 1945	gcg Ala	acc Thr	aga Arg	aca Thr	cag Gln 1950	acg Thr	ccg Pro	tac Tyr	5859
act Thr	aat Asn 1955	gtc Val	gtc Val	cgt Arg	att Ile	ccg Pro 1960	gac Asp	gaa Glu	atg Met	ggc Gly	ttc Phe 1965	cca Pro	gaa Glu	gcc Ala	5904
gct Ala	tcg Ser 1970	gtc Val	ccc Pro	ctg Leu	gct Ala	ttc Phe 1975	act Thr	acc Thr	gca Ala	tat Tyr	att Ile 1980	gcg Ala	ctt Leu	tat Tyr	5949
acc Thr	acg Thr 1985	gca Ala	aag Lys	cta Leu	cga Arg	cga Arg 1990	ggc Gly	gaa Glu	aga Arg	gtc Val	ttg Leu 1995	atc Ile	cac His	agt Ser	5994
gga Gly	gct Ala 2000	gga Gly	ggc Gly	gtc Val	ggg Gly	caa Gln 2005	gca Ala	gcg Ala	atc Ile	att Ile	ttg Leu 2010	tcc Ser	cag Gln	ctt Leu	6039
gcg Ala	ggg Gly 2015	gcc Ala	gag Glu	gtc Val	ttc Phe	gtc Val 2020	aca Thr	gcg Ala	gga Gly	act Thr	caa Gln 2025	gcc Ala	aag Lys	cgt Arg	6084
gac Asp	ttt Phe 2030	gtc Val	ggc Gly	gat Asp	aaa Lys	ttc Phe 2035	ggc Gly	atc Ile	aat Asn	ccg Pro	gat Asp 2040	cat His	atc Ile	ttc Phe	6129
tcg Ser	agc Ser	agg Arg	aat Asn	gac Asp	tta Leu	ttc Phe	gtc Val	gac Asp	ggc Gly	atc Ile	aaa Lys	gcc Ala	tac Tyr	acg Thr	6174

2045						2050						2055						
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ctc Leu	ctc Leu 2075	caa Gln	gca Ala	agc Ser	ttt Phe	gac Asp 2080	tgc Cys	atg Met	gcc Ala	gaa Glu	ttc Phe 2085	ggc Gly	aga Arg	ttt Phe	6264			
ggt Val	gag Glu 2090	att Ile	gga Gly	aaa Lys	aag Lys	gac Asp 2095	ctg Leu	gag Glu	caa Gln	aac Asn	agc Ser 2100	aga Arg	ctt Leu	gac Asp	6309			
atg Met	ctg Leu 2105	cca Pro	ttc Phe	acc Thr	cgg Arg	gac Asp 2110	gtc Val	tct Ser	ttc Phe	aca Thr	tca Ser 2115	att Ile	gat Asp	ctt Leu	6354			
ctc Leu	tcg Ser 2120	tgg Trp	caa Gln	aga Arg	gcc Ala	aaa Lys 2125	agt Ser	gaa Glu	gaa Glu	gta Val	tcc Ser 2130	gaa Glu	gcg Ala	ttg Leu	6399			
aac Asn	cat His 2135	gtc Val	aca Thr	aaa Lys	ctc Leu	ctc Leu 2140	gag Glu	aca Thr	aaa Lys	gcg Ala	att Ile 2145	ggc Gly	ttg Leu	att Ile	6444			
ggt Gly	cca Pro 2150	atc Ile	cag Gln	cag Gln	cac His	tcc Ser 2155	ttg Leu	tca Ser	aac Asn	atc Ile	gag Glu 2160	aag Lys	gcc Ala	ttc Phe	6489			
cgt Arg	acg Thr 2165	atg Met	cag Gln	agt Ser	ggt Gly	cag Gln 2170	cat His	ggt Val	ggc Gly	aaa Lys	ggt Val 2175	gtg Val	gtc Val	aat Asn	6534			
gta Val	tct Ser 2180	ggg Gly	gac Asp	gaa Glu	ctg Leu	gtc Val 2185	cca Pro	gtc Val	ggc Gly	gat Asp	gga Gly 2190	ggg Gly	ttc Phe	tcg Ser	6579			
ctg Leu	aag Lys 2195	ctg Leu	aag Lys	cct Pro	gac Asp	agt Ser 2200	tct Ser	tac Tyr	cta Leu	ggt Val	gct Ala 2205	ggg Gly	ggg Gly	ctg Leu	6624			
ggg Gly	gga Gly 2210	att Ile	gga Gly	aag Lys	cag Gln	atc Ile 2215	tgt Cys	cag Gln	tgg Trp	ctt Leu	ggt Val 2220	gat Asp	cat His	ggc Gly	6669			
gcg Ala	aag Lys 2225	cac His	ttg Leu	att Ile	atc Ile	cta Leu 2230	tcg Ser	aga Arg	agt Ser	gca Ala	aag Lys 2235	gcc Ala	agt Ser	cca Pro	6714			
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gca Ala	tgt Cys 2255	gac Asp	atc Ile	tca Ser	gat Asp	caa Gln 2260	gat Asp	cag Gln	gtc Val	acc Thr	aag Lys 2265	gtg Val	ctc Leu	cgg Arg	6804			
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Gln Lys Leu Trp Glu Met Val Glu Arg Gly Gly Ser Ala Trp Ser Lys
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Val Pro Ser Ser Arg Phe Asn Val Arg Gly Val Tyr His Pro Asn Gly
 65 70 75 80

Glu Arg Val Gly Ser Thr His Val Lys Gly Gly His Phe Ile Asp Glu
 85 90 95

Asp Pro Ala Leu Phe Asp Ala Ala Phe Phe Asn Met Thr Thr Glu Val
 100 105 110

Ala Ser Cys Met Asp Pro Gln Tyr Arg Leu Met Leu Glu Val Val Tyr
 115 120 125

Glu Ser Leu Glu Ser Ala Gly Ile Thr Ile Asp Gly Met Ala Gly Ser
 130 135 140

Asn Thr Ser Val Phe Gly Gly Val Met Tyr His Asp Tyr Gln Asp Ser
 145 150 155 160

Leu Asn Arg Asp Pro Glu Thr Val Pro Arg Tyr Phe Ile Thr Gly Asn
 165 170 175

Ser Gly Thr Met Leu Ser Asn Arg Ile Ser His Phe Tyr Asp Leu Arg
 180 185 190

Gly Pro Ser Val Thr Val Asp Thr Ala Cys Ser Thr Thr Leu Thr Ala
 195 200 205

Leu His Leu Ala Cys Gln Ser Leu Arg Thr Gly Glu Ser Asp Thr Ala
 210 215 220

Ile Val Ile Gly Ala Asn Leu Leu Leu Asn Pro Asp Val Phe Val Thr
 225 230 235 240

Met Ser Asn Leu Gly Phe Leu Ser Pro Asp Gly Ile Ser Tyr Ser Phe
 245 250 255

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Asp Pro Arg Ala Asn Gly Tyr Gly Arg Gly Glu Gly Ile Ala Ala Leu
260 265 270

Val Ile Lys Ala Leu Pro Asn Ala Leu Arg Asp Gln Asp Pro Ile Arg
275 280 285

Ala Val Ile Arg Glu Thr Ala Leu Asn Gln Asp Gly Lys Thr Pro Ala
290 295 300

Ile Thr Ala Pro Ser Asp Val Ala Gln Lys Ser Leu Ile Gln Glu Cys
305 310 315 320

Tyr Asp Lys Ala Gly Leu Asp Met Ser Leu Thr Ser Tyr Val Glu Ala
325 330 335

His Gly Thr Gly Thr Pro Thr Gly Asp Pro Leu Glu Ile Ser Ala Ile
340 345 350

Ser Ala Ala Phe Lys Gly His Pro Leu His Leu Gly Ser Val Lys Ala
355 360 365

Asn Ile Gly His Thr Glu Ala Ala Ser Gly Leu Ala Ser Ile Ile Lys
370 375 380

Val Ala Leu Ala Leu Glu Lys Gly Leu Ile Pro Pro Asn Ala Arg Phe
385 390 395 400

Leu Gln Lys Asn Ser Lys Leu Met Leu Asp Gln Lys Asn Ile Lys Ile
405 410 415

Pro Met Ser Ala Gln Asp Trp Pro Val Lys Asp Gly Thr Arg Arg Ala
420 425 430

Ser Val Asn Asn Phe Gly Phe Gly Gly Ser Asn Ala His Val Ile Leu
435 440 445

Glu Ser Tyr Asp Arg Ala Ser Leu Ala Leu Pro Glu Asp Gln Val His
450 455 460

Val Asn Gly Asn Ser Glu His Gly Arg Val Glu Asp Gly Ser Lys Gln
465 470 475 480

Ser Arg Ile Tyr Val Val Arg Ala Lys Asp Glu Gln Ala Cys Arg Arg
485 490 495

Thr Ile Ala Ser Leu Arg Asp Tyr Ile Lys Ser Val Ala Asp Ile Asp
500 505 510

Gly Glu Pro Phe Leu Ala Ser Leu Ala Tyr Thr Leu Gly Ser Arg Arg
515 520 525

Ser Ile Leu Pro Trp Thr Ser Val Tyr Val Ala Asp Ser Leu Gly Gly
530 535 540

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Leu Val Ser Ala Leu Ser Asp Glu Ser Asn Gln Pro Lys Arg Ala Asn
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Glu Lys Val Arg Leu Gly Phe Val Phe Thr Gly Gln Gly Ala Gln Trp
565 570 575

His Ala Met Gly Arg Glu Leu Val Asn Thr Phe Pro Val Phe Lys Gln
580 585 590

Ala Ile Leu Glu Cys Asp Gly Tyr Ile Lys Gln Leu Gly Ala Ser Trp
595 600 605

Asn Phe Met Glu Glu Leu His Arg Asp Glu Leu Thr Thr Arg Val Asn
610 615 620

Asp Ala Glu Tyr Ser Leu Pro Leu Ser Thr Ala Ile Gln Ile Ala Leu
625 630 635 640

Val Arg Leu Leu Trp Ser Trp Gly Ile Arg Pro Thr Gly Ile Thr Ser
645 650 655

His Ser Ser Gly Glu Ala Ala Ala Ala Tyr Ala Ala Gly Ala Leu Ser
660 665 670

Ala Arg Ser Ala Ile Gly Ile Thr Tyr Ile Arg Gly Val Leu Thr Thr
675 680 685

Lys Pro Lys Pro Ala Leu Ala Ala Lys Gly Gly Met Met Ala Val Gly
690 695 700

Leu Gly Arg Ser Glu Thr Asn Val Tyr Ile Ser Arg Leu Asn Gln Glu
705 710 715 720

Asp Gly Cys Val Val Val Gly Cys Ile Asn Ser Gln Cys Ser Val Thr
725 730 735

Val Ser Gly Asp Leu Gly Ala Ile Glu Lys Leu Glu Lys Leu Leu His
740 745 750

Ala Asp Gly Ile Phe Thr Arg Lys Leu Lys Val Thr Glu Ala Phe His
755 760 765

Ser Ser His Met Arg Pro Met Ala Asp Ala Phe Gly Ala Ser Leu Arg
770 775 780

Asp Leu Phe Asn Ser Asp Asn Asn Asn Asp Asn Pro Asn Ala Asp Thr
785 790 795 800

Ser Lys Gly Val Leu Tyr Ser Ser Pro Lys Thr Gly Ser Arg Met Thr
805 810 815

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Asp	Leu	Lys	Leu	Leu	Leu	Asp	Pro	Thr	His	Trp	Met	Asp	Ser	Met	Leu
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Gln	Pro	Val	Glu	Phe	Glu	Ser	Ser	Leu	Arg	Glu	Met	Cys	Phe	Asp	Pro
		835					840					845			
Asn	Thr	Lys	Glu	Lys	Ala	Val	Asp	Val	Ile	Ile	Glu	Ile	Gly	Pro	His
	850					855					860				
Gly	Ala	Leu	Gly	Gly	Pro	Ile	Asn	Gln	Val	Met	Gln	Asp	Leu	Gly	Leu
865					870					875					880
Lys	Gly	Thr	Asp	Ile	Asn	Tyr	Leu	Ser	Cys	Leu	Ser	Arg	Gly	Arg	Ser
				885					890					895	
Ser	Leu	Glu	Thr	Met	Tyr	Arg	Ala	Ala	Thr	Glu	Leu	Ile	Ser	Lys	Gly
			900					905						910	
Tyr	Gly	Leu	Lys	Met	Asp	Ala	Ile	Asn	Phe	Pro	His	Gly	Arg	Lys	Glu
		915					920					925			
Pro	Arg	Val	Lys	Val	Leu	Ser	Asp	Leu	Pro	Ala	Tyr	Pro	Trp	Asn	His
	930					935					940				
Gln	Thr	Arg	Tyr	Trp	Arg	Glu	Pro	Arg	Gly	Ser	Arg	Glu	Ser	Lys	Gln
945					950					955					960
Arg	Thr	His	Pro	Pro	His	Thr	Leu	Ile	Gly	Ser	Arg	Glu	Ser	Leu	Ser
				965					970					975	
Pro	His	Phe	Ala	Pro	Lys	Trp	Lys	His	Val	Leu	Arg	Leu	Ser	Asp	Ile
		980						985					990		
Pro	Trp	Ile	Arg	Asp	His	Val	Val	Gly	Ser	Ser	Ile	Ile	Phe	Pro	Gly
		995					1000					1005			
Ala	Gly	Phe	Ile	Ser	Met	Ala	Ile	Glu	Gly	Phe	Ser	Gln	Val	Cys	
	1010					1015					1020				
Pro	Pro	Val	Ala	Gly	Ala	Ser	Ile	Asn	Tyr	Asn	Leu	Arg	Asp	Val	
	1025					1030					1035				
Glu	Leu	Ala	Gln	Ala	Leu	Ile	Ile	Pro	Ala	Asp	Ala	Glu	Ala	Glu	
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Val	Asp	Leu	Arg	Leu	Thr	Ile	Arg	Ser	Cys	Glu	Glu	Arg	Ser	Leu	
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Gly	Thr	Lys	Asn	Trp	His	Gln	Phe	Ser	Val	His	Ser	Ile	Ser	Gly	
	1070					1075					1080				
Glu	Asn	Asn	Thr	Trp	Thr	Glu	His	Cys	Thr	Gly	Leu	Ile	Arg	Ser	
	1085					1090					1095				

Glu Ser 1100	Glu Arg Ser His 1105	Leu Asp Cys Ser Thr 1110	Glu Ala Ser
Arg Arg 1115	Leu Asn Leu Gly Ser 1120	Asp Asn Arg Ser Ile 1125	Asp Pro Asn
Asp Leu 1130	Trp Glu Ser Leu His 1135	Ala Asn Gly Ile Cys 1140	His Gly Pro
Ile Phe 1145	Gln Asn Ile Gln Arg 1150	Ile Gln Asn Asn Gly 1155	Gln Gly Ser
Phe Cys 1160	Arg Phe Ser Ile Ala 1165	Asp Thr Ala Ser Ala 1170	Met Pro His
Ser Tyr 1175	Glu Asn Arg His Ile 1180	Val His Pro Thr Thr 1185	Leu Asp Ser
Val Ile 1190	Gln Ala Ala Tyr Thr 1195	Val Leu Pro Tyr Ala 1200	Gly Thr Arg
Met Lys 1205	Thr Ala Met Val Pro 1210	Arg Arg Leu Arg Asn 1215	Val Lys Ile
Ser Ser 1220	Ser Leu Ala Asp Leu 1225	Glu Ala Gly Asp Ala 1230	Leu Asp Ala
Gln Ala 1235	Ser Ile Lys Asp Arg 1240	Asn Ser Gln Ser Phe 1245	Ser Thr Asp
Leu Ala 1250	Val Phe Asp Asp Tyr 1255	Asp Ser Gly Ser Ser 1260	Pro Ser Asp
Gly Ile 1265	Pro Val Ile Glu Ile 1270	Glu Gly Leu Val Phe 1275	Gln Ser Val
Gly Ser 1280	Ser Phe Ser Asp Gln 1285	Lys Ser Asp Ser Asn 1290	Asp Thr Glu
Asn Ala 1295	Cys Ser Ser Trp Val 1300	Trp Ala Pro Asp Ile 1305	Ser Leu Gly
Asp Ser 1310	Thr Trp Leu Lys Glu 1315	Lys Leu Ser Thr Glu 1320	Ala Glu Thr
Lys Glu 1325	Thr Glu Leu Met Met 1330	Asp Leu Arg Arg Cys 1335	Thr Ile Asn
Phe Ile 1340	Gln Glu Ala Val Thr 1345	Asp Leu Thr Asn Ser 1350	Asp Ile Gln

Phe	Asn	Gly	Val	Glu	Leu	Glu	Val	Arg	Asp	Cys	Glu	Asp	Asp	Glu
1625						1630					1635			
Phe	Tyr	Met	Ile	Ser	Thr	Met	Leu	Ser	Thr	Ala	Arg	Lys	Glu	Asn
1640						1645					1650			
Thr	Thr	Pro	Asp	Thr	Val	Ala	Glu	Ser	Glu	Val	Leu	Leu	Leu	His
1655						1660					1665			
Gly	Ala	Leu	Arg	Pro	Pro	Ser	Ser	Trp	Leu	Glu	Ser	Leu	Gln	Ala
1670						1675					1680			
Ala	Ile	Cys	Glu	Lys	Thr	Ser	Ser	Ser	Pro	Ser	Ile	Asn	Ala	Leu
1685						1690					1695			
Gly	Glu	Val	Asp	Thr	Thr	Gly	Arg	Thr	Cys	Ile	Phe	Leu	Gly	Glu
1700						1705					1710			
Met	Glu	Ser	Ser	Leu	Leu	Gly	Glu	Val	Gly	Ser	Glu	Thr	Phe	Lys
1715						1720					1725			
Ser	Ile	Thr	Ala	Met	Leu	Asn	Asn	Cys	Asn	Ala	Leu	Leu	Trp	Val
1730						1735					1740			
Ser	Arg	Gly	Ala	Ala	Met	Ser	Ser	Glu	Asp	Pro	Trp	Lys	Ala	Leu
1745						1750					1755			
His	Ile	Gly	Leu	Leu	Arg	Thr	Ile	Arg	Asn	Glu	Asn	Asn	Gly	Lys
1760						1765					1770			
Glu	Tyr	Val	Ser	Leu	Asp	Leu	Asp	Pro	Ser	Arg	Asn	Ala	Tyr	Thr
1775						1780					1785			
His	Glu	Ser	Leu	Tyr	Ala	Ile	Cys	Asn	Ile	Phe	Asn	Gly	Arg	Leu
1790						1795					1800			
Gly	Asp	Leu	Ser	Glu	Asp	Lys	Glu	Phe	Glu	Phe	Ala	Glu	Arg	Asn
1805						1810					1815			
Gly	Val	Ile	His	Val	Pro	Arg	Leu	Phe	Asn	Asp	Pro	His	Trp	Lys
1820						1825					1830			
Asp	Gln	Glu	Ala	Val	Glu	Val	Thr	Leu	Gln	Pro	Phe	Glu	Gln	Pro
1835						1840					1845			
Gly	Arg	Arg	Leu	Arg	Met	Glu	Val	Glu	Thr	Pro	Gly	Leu	Leu	Asp
1850						1855					1860			
Ser	Leu	Gln	Phe	Arg	Asp	Asp	Glu	Gly	Arg	Glu	Gly	Lys	Asp	Leu
1865						1870					1875			

Pro Asp Asp Trp Val Glu Ile Glu Pro Lys Ala Phe Gly Leu Asn
1880 1885 1890

Phe Arg Asp Val Met Val Ala Met Gly Gln Leu Glu Ala Asn Arg
1895 1900 1905

Val Met Gly Phe Glu Cys Ala Gly Val Ile Thr Lys Leu Gly Gly
1910 1915 1920

Ala Ala Ala Ala Ser Gln Gly Leu Arg Leu Gly Asp Arg Val Cys
1925 1930 1935

Ala Leu Leu Lys Gly His Trp Ala Thr Arg Thr Gln Thr Pro Tyr
1940 1945 1950

Thr Asn Val Val Arg Ile Pro Asp Glu Met Gly Phe Pro Glu Ala
1955 1960 1965

Ala Ser Val Pro Leu Ala Phe Thr Thr Ala Tyr Ile Ala Leu Tyr
1970 1975 1980

Thr Thr Ala Lys Leu Arg Arg Gly Glu Arg Val Leu Ile His Ser
1985 1990 1995

Gly Ala Gly Gly Val Gly Gln Ala Ala Ile Ile Leu Ser Gln Leu
2000 2005 2010

Ala Gly Ala Glu Val Phe Val Thr Ala Gly Thr Gln Ala Lys Arg
2015 2020 2025

Asp Phe Val Gly Asp Lys Phe Gly Ile Asn Pro Asp His Ile Phe
2030 2035 2040

Ser Ser Arg Asn Asp Leu Phe Val Asp Gly Ile Lys Ala Tyr Thr
2045 2050 2055

Gly Gly Leu Gly Val His Val Val Leu Asn Ser Leu Ala Gly Gln
2060 2065 2070

Leu Leu Gln Ala Ser Phe Asp Cys Met Ala Glu Phe Gly Arg Phe
2075 2080 2085

Val Glu Ile Gly Lys Lys Asp Leu Glu Gln Asn Ser Arg Leu Asp
2090 2095 2100

Met Leu Pro Phe Thr Arg Asp Val Ser Phe Thr Ser Ile Asp Leu
2105 2110 2115

Leu Ser Trp Gln Arg Ala Lys Ser Glu Glu Val Ser Glu Ala Leu
2120 2125 2130

Asn His Val Thr Lys Leu Leu Glu Thr Lys Ala Ile Gly Leu Ile
2135 2140 2145

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atg gcc gac gag ttt cgg aaa atc aaa gat atg tgc atg tac aag ttt Met Ala Asp Glu Phe Arg Lys Ile Lys Asp Met Cys Met Tyr Lys Phe 100 105 110	336
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gaa atc tgc cag gat gca cat ctt gtc aac aaa gtt gtt ttg aac cag Glu Ile Cys Gln Asp Ala His Leu Val Asn Lys Val Val Leu Asn Gln 130 135 140	432
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355 360 365

Lys Pro Val Glu Cys Ala Thr Met Arg Ser Thr Ala Leu Arg Asp Ile
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Thr Leu Ser Asn Gly Leu Phe Ile Pro Lys Gly Glu Leu Ala Ala Val
385 390 395 400

Ala Ala Asp Arg Met Asn Asn Pro Asp Val Trp Glu Asn Pro Glu Asn
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Tyr Asp Pro Tyr Arg Phe Met Arg Met Arg Glu Asp Pro Asp Lys Ala
420 425 430

Phe Thr Ala Gln Leu Glu Asn Thr Asn Gly Asp His Ile Gly Phe Gly
435 440 445

Trp Asn Pro Arg Ala Cys Pro Gly Arg Phe Phe Ala Ser Lys Glu Ile
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Lys Ile Leu Leu Ala His Ile Leu Ile Gln Tyr Asp Val Lys Pro Val
465 470 475 480

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Asn Gln Gln His Pro Leu Arg Ser Gly Asn Arg Ala Leu Thr Ser Thr
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ctc caa ttt cta tcc aaa acg gcg tgt cta cac ccg atc cat acc gtt 144
Leu Gln Phe Leu Ser Lys Thr Ala Cys Leu His Pro Ile His Thr Val
35 40 45
tgc acc ata gct att cta gct agt acc aca tac gtt gga cta ctc aaa 192
Cys Thr Ile Ala Ile Leu Ala Ser Thr Thr Tyr Val Gly Leu Leu Lys

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gac gtg gtt gtc atg gtg cta ggt tat ata tca atg cac ttg act ttc Asp Val Val Val Met Val Leu Gly Tyr Ile Ser Met His Leu Thr Phe 245 250 255			768
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gct aca agc gtc ctt ttg tcg tca aca ttt gcc ttt ctc ctc ggt ctc Ala Thr Ser Val Leu Leu Ser Ser Thr Phe Ala Phe Leu Leu Gly Leu 275 280 285			864
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gaa ggc ctc ccc ttc ttg gtg gtg atc gtt ggc ttt gag aag agc atc Glu Gly Leu Pro Phe Leu Val Val Ile Val Gly Phe Glu Lys Ser Ile 305 310 315 320			960
act ctg acc agg gct gtt ttg tcc tat gct gtg cag cac cga aag ccc Thr Leu Thr Arg Ala Val Leu Ser Tyr Ala Val Gln His Arg Lys Pro 325 330 335			1008

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Thr	Ile	Asn	Tyr	Ala	Val	Arg	Ser	Ala	Ile	Arg	Glu	Lys	Gly	Tyr	Asn	
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360																
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Leu	Phe	Gln	Ala	Ser	Ser	Ser	Gly	Ser	Leu	Ser	Ser	Ile	Ser	Ser	Trp	
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Thr	Glu	Ser	Leu	Ser	Gly	Ser	Ala	Ile	Lys	Pro	Pro	Leu	Glu	Pro	Phe	
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Pro	Val	Leu	Ser	Lys	Trp	Val	Phe	Val	Ala	Leu	Ala	Leu	Ser	Val	Ala	
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caa gct cct cag acc aga gtg ttc act cct acc acc acc gac agt gac Gln Ala Pro Gln Thr Arg Val Phe Thr Pro Thr Thr Thr Asp Ser Asp 660 665 670			2016
agt gat gcc tca tta gtc tta att aaa gca tct cta aag gtc act aag Ser Asp Ala Ser Leu Val Leu Ile Lys Ala Ser Leu Lys Val Thr Lys 675 680 685			2064
cga gca gaa gga aag aca gcc act agt gaa ctt ccc gtg tct cgc aca Arg Ala Glu Gly Lys Thr Ala Thr Ser Glu Leu Pro Val Ser Arg Thr 690 695 700			2112
caa atc gaa ctg gac aat ttg ctg aag cag aac aca atc agc gag ttg Gln Ile Glu Leu Asp Asn Leu Leu Lys Gln Asn Thr Ile Ser Glu Leu 705 710 715 720			2160
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tat gcc cta gag aag agt ctc aaa gac tgc act cgt gcc gtc aag gtt Tyr Ala Leu Glu Lys Ser Leu Lys Asp Cys Thr Arg Ala Val Lys Val 740 745 750			2256
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gtg ctc ggt gca tgt tgc gag aac gtt att ggc tat atg cca gtc cct Val Leu Gly Ala Cys Cys Glu Asn Val Ile Gly Tyr Met Pro Val Pro 785 790 795 800			2400
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agt aag gca atc aac ctc ggt ggc ggt gcc gtg aca gtc ctg act ggc Ser Lys Ala Ile Asn Leu Gly Gly Ala Val Thr Val Leu Thr Gly 835 840 845			2544
gac ggt atg aca cga ggc ccg tgt gtg aag ttt gat gtc ctt gaa cga Asp Gly Met Thr Arg Gly Pro Cys Val Lys Phe Asp Val Leu Glu Arg 850 855 860			2592
gct ggt gct gct aag atc tgg ctc gat tcg gac gtc ggc cag acc gta Ala Gly Ala Ala Lys Ile Trp Leu Asp Ser Asp Val Gly Gln Thr Val 865 870 875 880			2640
atg aaa gaa gcc ttc aat tca acc agc aga ttt gcg cgc tta caa agt Met Lys Glu Ala Phe Asn Ser Thr Ser Arg Phe Ala Arg Leu Gln Ser 885 890 895			2688

atg Met	cgg Arg	aca Thr	act Thr	atc Ile	gcc Ala	ggt Gly	act Thr	cac His	tta Leu	tat Tyr	att Ile	cga Arg	ttt Phe	aag Lys	act Thr	2736
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act Thr	act Thr	ggc Gly	gac Asp	gct Ala	atg Met	gga Gly	atg Met	aat Asn	atg Met	att Ile	tct Ser	aag Lys	ggc Gly	gtg Val	gag Glu	2784
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 35 40 45

Cys Thr Ile Ala Ile Leu Ala Ser Thr Thr Tyr Val Gly Leu Leu Lys
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Asp Ser Phe Phe His Gly Pro Ala Asn Val Asp Lys Ala Glu Trp Gly
 65 70 75 80

Ser Leu Val Glu Gly Ser Arg Ser Leu Ile Thr Gly Pro Gln Asn Gly
 85 90 95

Trp Lys Trp Gln Ser Phe Asp Gly Asp Ala Asp Val Leu Gly Asp Phe
 100 105 110

Asn His Gln Ala Leu Met Thr Leu Val Phe Pro Gly Ser Tyr Gly Val
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Ala Ser Gln Ala Ala Ser Pro Phe Leu Ala Pro Leu Pro Val Asn Leu
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Ser Val Ile Asp Leu Pro Ser Thr Ser Ser Pro Leu Thr Ala Tyr Ser
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Lys Asp Lys Val Phe Ala Phe Ser Val Glu Tyr Ser Ser Ala Pro Glu
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Leu Val Ala Ala Val Gln Glu Ile Pro Asn Asn Ser Ala Asp Leu Lys
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Leu Gln Glu Thr Gln Leu Ile Glu Met Glu Arg Gln Met Trp Ile Met
 195 200 205

Lys Ala Ala Arg Ala His Thr Lys Arg Ser Leu Ala Gln Trp Val His
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Asp Thr Trp Thr Glu Ser Leu Asp Leu Ile Lys Ser Ala Gln Thr Leu
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Val Ser Leu Phe Leu Ser Met Lys Lys Leu Gly Ser Lys Val Trp Leu
260 265 270

Ala Thr Ser Val Leu Leu Ser Ser Thr Phe Ala Phe Leu Leu Gly Leu
275 280 285

Asp Val Ala Ile Arg Leu Gly Val Pro Met Ser Met Arg Leu Leu Ser
290 295 300

Glu Gly Leu Pro Phe Leu Val Val Ile Val Gly Phe Glu Lys Ser Ile
305 310 315 320

Thr Leu Thr Arg Ala Val Leu Ser Tyr Ala Val Gln His Arg Lys Pro
325 330 335

Gln Lys Ile Gln Ser Asp Gln Gly Ser Val Thr Ala Ile Ala Glu Ser
340 345 350

Thr Ile Asn Tyr Ala Val Arg Ser Ala Ile Arg Glu Lys Gly Tyr Asn
355 360 365

Ile Val Cys His Tyr Val Val Glu Ile Leu Leu Leu Val Ile Gly Ala
370 375 380

Val Leu Gly Ile Gln Gly Gly Leu Gln His Phe Cys Val Leu Ala Ala
385 390 395 400

Leu Ile Leu Phe Phe Asp Cys Leu Leu Leu Phe Thr Phe Tyr Thr Ala
405 410 415

Ile Leu Ser Ile Lys Leu Glu Val Asn Arg Leu Lys Arg His Ile Asn
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Met Arg Tyr Ala Leu Glu Asp Glu Gly Leu Ser Gln Arg Thr Ala Glu
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Ser Val Ala Thr Ser Asn Asp Ala Gln Asp Ser Ala Arg Thr Tyr Leu
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Phe Gly Asn Asp Met Lys Gly Ser Ser Val Pro Lys Phe Lys Phe Trp
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Met Val Val Gly Phe Leu Ile Val Asn Leu Val Asn Ile Gly Ser Thr
485 490 495

Leu Phe Gln Ala Ser Ser Ser Gly Ser Leu Ser Ser Ile Ser Ser Trp
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Thr Glu Ser Leu Ser Gly Ser Ala Ile Lys Pro Pro Leu Glu Pro Phe
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 Lys Val Ala Gly Ser Gly Leu Asp Glu Leu Leu Phe Gln Ala Arg Gly
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 Arg Gly Gln Ser Thr Met Val Thr Val Leu Ala Pro Ile Lys Tyr Glu
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 Leu Glu Tyr Pro Ser Ile His Arg Gly Thr Ser Gln Leu His Glu Tyr
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 Gly Val Gly Gly Lys Met Val Gly Ser Leu Leu Thr Ser Leu Glu Asp
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 Pro Val Leu Ser Lys Trp Val Phe Val Ala Leu Ala Leu Ser Val Ala
 595 600 605
 Leu Asn Ser Tyr Leu Phe Lys Ala Ala Arg Leu Gly Ile Lys Asp Pro
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 625 630 635 640
 Ser Phe Asn Ala Ala Gln Asn Gln Thr Pro Gln Ile Gln Ser Ser Leu
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 Gln Ala Pro Gln Thr Arg Val Phe Thr Pro Thr Thr Thr Asp Ser Asp
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 Arg Ala Glu Gly Lys Thr Ala Thr Ser Glu Leu Pro Val Ser Arg Thr
 690 695 700
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 Asn Asp Glu Asp Val Val Ala Leu Ser Leu Arg Gly Lys Val Pro Gly
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 Tyr Ala Leu Glu Lys Ser Leu Lys Asp Cys Thr Arg Ala Val Lys Val
 740 745 750
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 Val Leu Gly Ala Cys Cys Glu Asn Val Ile Gly Tyr Met Pro Val Pro
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Met	Lys	Glu	Ala	Phe	Asn	Ser	Thr	Ser	Arg	Phe	Ala	Arg	Leu	Gln	Ser
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Ile	Pro	Ala	Asn	Val	Val	Arg	Asp	Val	Leu	Lys	Ser	Asp	Val	Asp	Ser
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Gly Val Arg Gly Ser His Pro Thr Thr Pro Gly Glu Asn Ala Arg
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